

Work Order ID 65581

January 20, 2011 9:14:54 AM



Page 1

Item ID:	D4184-1	Accept		Setup	Start	
Revision ID:	PRELIM				Stop	
Item Name:	Main Case					
Start Date:	1/20/11	Start Qty: 2.00		Cust Item ID:		
Required Date:	2/04/11	Req'd Qty: 2.00		Customer:		
Reference:						

Approvals:	Process Plan:	<u>CL</u>	Date:	<u>11/01/20</u>	Tooling:		Date:		Run	Start	
	QC:		Date:		SPC (Y/N):		Date:			Stop	

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr								
D4184	<u>PAT 3A3</u>	<u>2AB</u>	<u>11.03.25</u>						

100		0.00							
-----	--	------	--	--	--	--	--	--	--

						<u>2</u>	<u>0</u>		
--	--	--	--	--	--	----------	----------	--	--

HAAS 1	Memo	0.00	<u>B.A</u>	<u>11/01/25</u>					
HAAS CNC vertical machine #1	MILL AS PER DWG AND FOLIO FB001								
	FOLIO REV: <u>AA</u>								
	DWG REV: <u>PA</u>								

	2-DEBURR								
--	----------	--	--	--	--	--	--	--	--

110	QC2- Inspect parts off machine FAI/FAIB	0.00	<u>B.A</u>	<u>11/01/26</u>					
-----	---	------	------------	-----------------	--	--	--	--	--

						<u>2</u>	<u>0</u>		
--	--	--	--	--	--	----------	----------	--	--

QC	Memo	0.00							
Quality Control									



PRELIMINARY ISSUE

<p>MATERIAL CERTIFICATION</p> <p>REQ'D UPON DELIVERY</p>
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 65581

January 20, 2011 9:14:54 AM

Page 2

Item ID: D4184-1

Accept

Revision ID: PRELIM

Item Name: Main Case

Start Date: 1/20/11 Start Qty: 2.00

Required Date: 2/04/11 Req'd Qty: 2.00

Reference:

Cust Item ID:

Customer:

Approvals: Process Plan: Date: Tooling: Date:

QC: Date: SPC (Y/N): Date:

Run Start

Stop

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

120

0.00



Mill Conv

Memo

0.00

Conventional Milling Machine

1-DRILL LOCK WIRE HOLES AS PER DWG X4

2-TAP HELICOIL HOLES AS PER DWG

3-DRILL & REAM .323" DIA HOLE

4-DRILL .25" DIA HOLE

TAP FOR 1/4 Helicoil

130

QC2- Inspect parts off machine FAI/FAIB

0.00



QC

Memo

0.00

Quality Control

140

QC8- Inspect parts - second check

0.00



QC

Memo

0.00

Quality Control

11-03-15

2 7

J.F.S. 11/03/16

2 0

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 65581

January 20, 2011 9:14:54 AM



Page 3

Item ID:	D4184-1	Accept		Setup	Start	
Revision ID:	PRELIM				Stop	
Item Name:	Main Case					
Start Date:	1/20/11	Start Qty: 2.00		Cust Item ID:		
Required Date:	2/04/11	Req'd Qty: 2.00		Customer:		
Reference:						

Approvals:	Process Plan:	Date:	Tooling:	Date:	Run	Start	
	QC:	Date:	SPC (Y/N):	Date:		Stop	

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
150 HandFinish	Chemical Conversion Coat per QSI005 4.1	0.00							
Hand Finishing	Memo	0.00				2		BR 11-03-17.	
160 QC	QC3- Inspect Part Finish	0.00							
Quality Control	Memo	0.00				2		11/03/12	
170 Packaging	Identify as per dwg & Stock Location: _____	0.00							
Packaging	Memo	0.00						11/03/23	

POSITIVE RECALL
EFFECTIVE 11/06/20 AUTH LL
RELEASED _____ DATE _____

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 65581

Page 4

January 20, 2011 9:14:54 AM

Item ID: D4184-1

Accept



Setup Start



Revision ID: PRELIM

Stop



Item Name: Main Case

Start Date: 1/20/11 Start Qty: 2.00



Cust Item ID:

Required Date: 2/04/11 Req'd Qty: 2.00



Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

180

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

January 20, 2011 9:14:53 AM

Page 1

Work Order ID: 65581

Parent Item: D4184-1

Parent Item Name: Main Case



Start Date: 1/20/11

Required Date: 2/04/11

Start Qty: 2.00

Required Qty: 2.00

Comments: IPP REV:A NEW ISSUE 11-01-19 JLM VERIFIED BY:DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D6102-001

Manufactured

No

Each

6.0000

2



Saddle Billet



SI 1/16/25

Location

Loc Qty

Loc Code

MAT

6

63656

6

2

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD		Work Order: 65581
Description: MAIN CASE		Part Number: D4184-1
Inspection Dwg: D4184 Rev: PA3 PA8		Page 1 of 4

FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☒ Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
2.48	+/- .030	2.482	✓		Vern	GA-01
4.81	+/- .030	4.814	✓		"	"
1.24	+/- .030	1.236	✓		"	"
1.40	+/- .030	1.399	✓		"	"
Ø 0.172	+ .005 / - .001	Ø 0.177	✓		"	"
5.22	+/- .030	5.217	✓		"	"
0.21	+/- .030	.204	✓		"	"
Ø .060	+ .004 / - .001				"	"
0.720	+/- .030	0.727	✓		H-G	31006
Ø 0.8125	+ .000 / - .001	Ø 0.8122	✓		Mic	GA-03
1.16	+/- .030	1.162	✓		Vern	GA-01
1.47	+/- .030	1.468	✓		"	"
Ø 0.891	+ .010 / - .001	Ø 0.891	✓		"	"
1.13	+/- .030	1.130	✓		"	"
Ø 0.060	+ .004 / - .001	.062	✓		JLMVB	
0.21	+/- .030	.213	✓		" "	
4.02	+/- .030	4.024	✓		" "	
1.383	+/- .010	1.381	✓		Vern	GA-01
1.183	+/- .010	1.181	✓		"	"
Ø 0.120	+ .004 / - .001	Ø 0.122	✓		"	"
Ø 0.725	+ .008 / - .001	Ø 0.725	✓		"	"
Ø 1.022	+ .012 / - .004	Ø 1.024	✓		"	"

Measured by: B.A. / [Signature]
Date: 11/01/26 / 11/03/28

Audited by: J.F.S.
Date: 11/03/16

Prototype Approval: [Signature]
Date: [Signature]

Rev	Date	Change	Revised by	Approved
A		New Issue	KJ/JLM	

DART AEROSPACE LTD		Work Order: 65581
Description: MAIN CASE		Part Number: D4184-1
Inspection Dwg: D4184 Rev: PA3 PA8		Page 2 of 4

FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☒ Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Ø 0.213	+0.005 / -0.001	Ø 0.215	✓		Vern	GA-01
Ø 0.259	+0.006 / -0.001	Ø 0.259	✓		"	"
Ø 0.249	+0.005 / -0.001	Ø 0.252	✓		"	"
0.100	+/- .010	0.103	✓		D-6	GA-08
1.14	+/- .030	1.145	✓		H-6	31006
0.79	+/- .030	0.790	✓		Vern	GA-01
1.66	+/- .030	1.661	✓		"	"
2.975	+/- .010	2.975	✓		H-6	31006
1.125	+/- .010	1.129	✓		Vern	GA-01
0.418	+/- .010	0.413	✓		H-6	31006
0.501	+/- .010	0.501	✓		H-6	31006
0.679	+/- .010	0.676	✓		Vern	GA-01
R 0.188	+/- .010	R 0.188	✓		R-6	ref.
0.188	+/- .010	0.188	✓		Vern	GA-01
R 0.19	+/- .030	R 0.188	✓		R-6	ref.
Ø 0.195	+0.005 / -0.001	Ø 0.197	✓		Vern	GA-01
1.29	+/- .030	1.290	✓		"	"
0.60	+/- .030	0.597	✓		"	"
R 0.38	+/- .030	R 0.375	✓		R-6	ref.
0.510	+/- .030	0.510	✓		Vern	GA-01
0.41	+/- .030	0.407	✓		H-6	31006
0.33	+/- .030	0.310	✓		Vern	GA-01

Measured by: B.A.	Audited by: J.F.S.	Prototype Approval:
Date: 11/01/26	Date: 11/03/16	Date:

Rev	Date	Change	Revised by	Approved
A		New Issue	KJ/JLM	

DART AEROSPACE LTD		Work Order: 65581
Description: MAIN CASE		Part Number: D4184-1
Inspection Dwg: D4184	Rev: PA3 PA5 PA6 PA7 PA8 PA9 PA10 PA11 PA12 PA13 PA14 PA15 PA16 PA17 PA18 PA19 PA20 PA21 PA22 PA23 PA24 PA25 PA26 PA27 PA28 PA29 PA30 PA31 PA32 PA33 PA34 PA35 PA36 PA37 PA38 PA39 PA40 PA41 PA42 PA43 PA44 PA45 PA46 PA47 PA48 PA49 PA50 PA51 PA52 PA53 PA54 PA55 PA56 PA57 PA58 PA59 PA60 PA61 PA62 PA63 PA64 PA65 PA66 PA67 PA68 PA69 PA70 PA71 PA72 PA73 PA74 PA75 PA76 PA77 PA78 PA79 PA80 PA81 PA82 PA83 PA84 PA85 PA86 PA87 PA88 PA89 PA90 PA91 PA92 PA93 PA94 PA95 PA96 PA97 PA98 PA99 PA100	Page 3 of 4

FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☒ Prototype

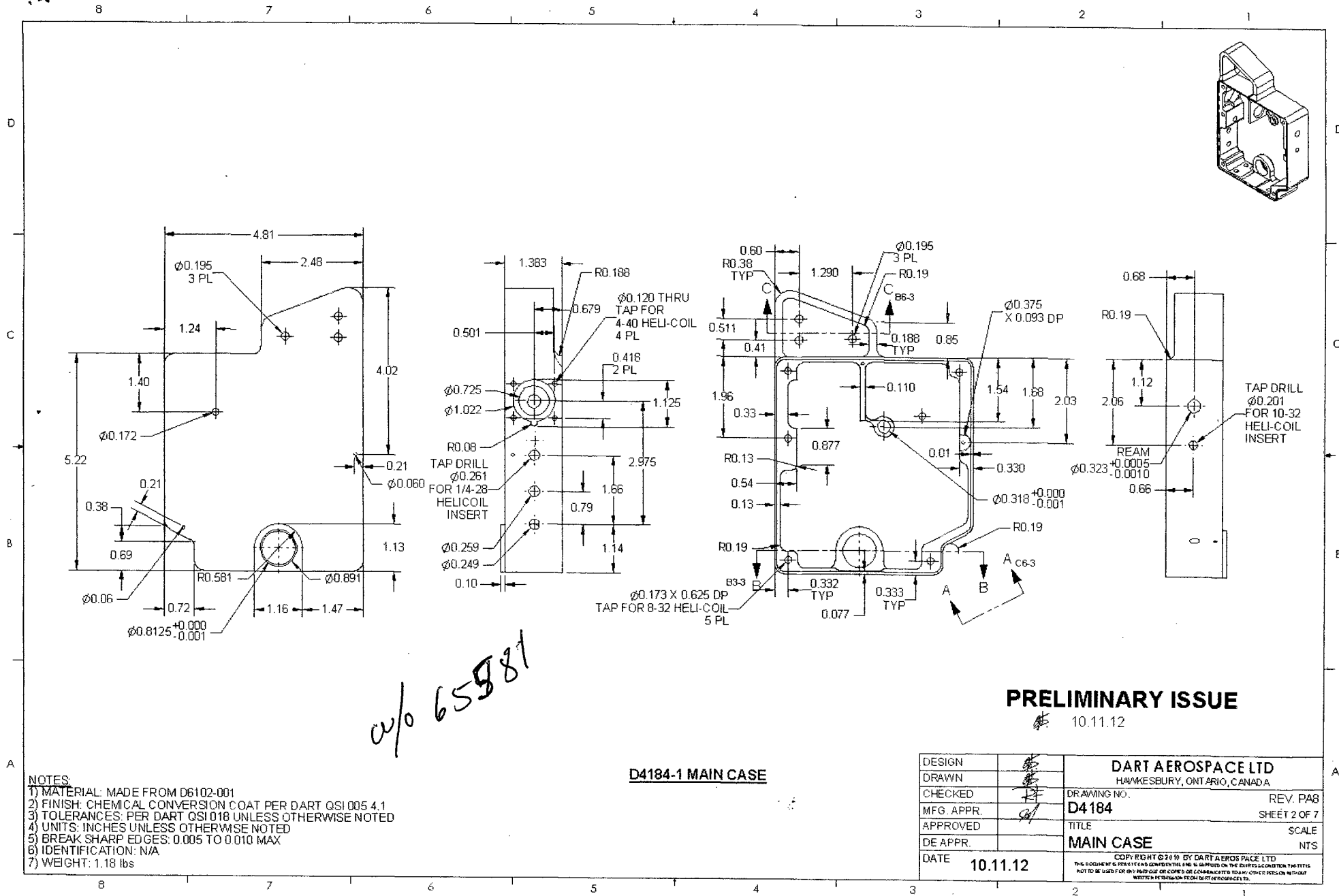
Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
1.93	+/- .030	1.928	✓		H-G	31006
R 0.13	+/- .030	R 0.125	✓		R-G	ref.
0.54	+/- .030	0.540	✓		Vern	GA-01
0.13	+/- .030	0.130	✓		"	"
R 0.19	+/- .030	R 0.188	✓		R-G	ref.
0.313	+/- .010	0.313	✓		Vern	GA-01
0.077	+/- .010	0.077	✓		"	"
0.314	+/- .010	0.314	✓		"	"
Ø 0.318	+0.000/- .001	0.3178	✓		Mic	GA-03
0.33	+/- .030	0.330	✓		Vern	GA-01
1.68	+/- .030	1.675	✓		H-G	31006
1.54	+/- .030	1.544	✓		"	"
0.110	+/- .010	0.110	✓		Vern	GA-01
0.68	+/- .030	0.680	✓		JLM/V6	
1.11	+/- .030	1.114	✓		JLM/V6	
2.04	+/- .030	2.038	✓		JLM/V6	
0.68	+/- .030	0.6799	✓		JLM/V6	
Ø 0.323	+ .0005/- .001	Ø 0.324	✓		JLM/V6	
Ø 0.161	+ .005/- .001	Ø 0.164	✓		JLM/V6	
0.055	+/- .010	0.055			Vern	GA-01
0.320	+/- .010	0.318	✓		JLM/V6	

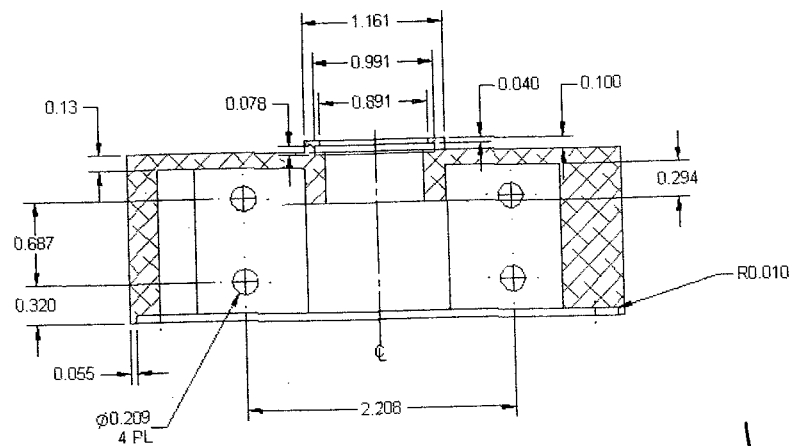
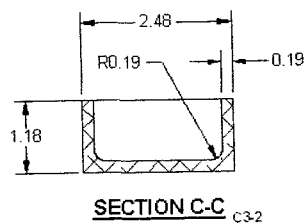
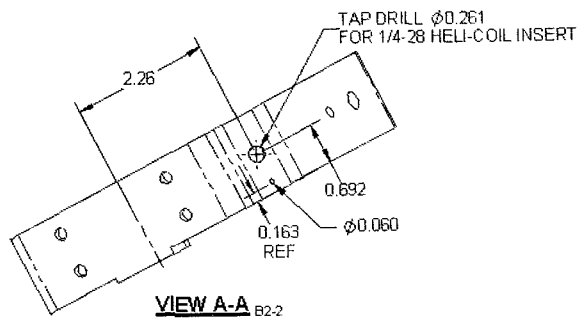
Measured by: B.A. / JLM	Audited by: J.F.S.	Prototype Approval:
Date: 11/01/26	Date: 11/03/16	Date:

Rev	Date	Change	Revised by	Approved
A		New Issue	KJ/JLM	

FIRST ARTICLE INSPECTION CHECKLIST

Rev	Date	Change	Revised by	Approved
A		New Issue	KJ/JLM	









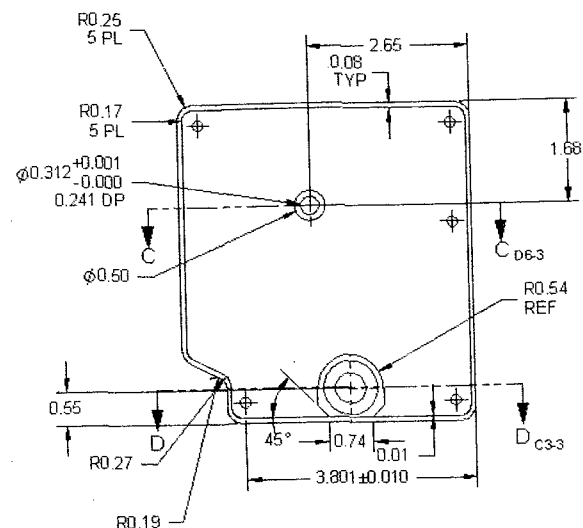
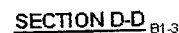
w/065581

D4184-1 MAIN CASE

PRELIMINARY ISSUE

10.11.12

DESIGN		DART AEROSPACE LTD	
DRAWN		HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. PA8
MFG. APPR.		D4184	SHEET 3 OF 7
APPROVED		TITLE	SCALE
DE APPR.		MAIN CASE	NTS
DATE	10.11.12	COPYRIGHT © 2010 BY DART AEROSPACE LTD	
THIS DOCUMENT IS PROPRIETARY AND IS SUPPLIED ON THE UNDERSTANDING THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.			



~~10.11.12~~ 10.11.12

D4184-3 MAIN CASE COVER

NOTES:
1) MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM BAR
PER QQ-A-225/8 OR AMS-QQ-A-225/8 (OR AMS 4117/4128/4115/4116)
OR QQ-A-200/8 OR AMS-QQ-A-200/8 (OR AMS 4160)
OR ASTM B211 OR ASTM B221
REF DART SPEC M6061T6B
2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
6) IDENTIFICATION: N/A
7) WEIGHT: 0.44 lbs

DESIGN	<i>[Signature]</i>	DART AEROSPACE LTD	
DRAWN	<i>[Signature]</i>	HAMKESBURY, ONTARIO, CANADA	
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. PAGE
MFG. APPR.	<i>[Signature]</i>	D1484	SHEET 4 OF 7
APPROVED		TITLE	SCALE
DE APPR.		MAIN CASE	NTS
DATE	10.11.12	COPY RIGHT © 2010 BY DART AEROSPACE LTD THIS DOCUMENT IS THE PROPERTY OF DART AEROSPACE LTD AND IS LOANED TO THE USER UNDER THE TERMS NOT TO BE USED FOR ANY PURPOSES OR COPIES OR COMMUNICATED TO ANY OTHER PERSON WITHOUT NOTICE BY DART AEROSPACE LTD. IT SHALL BE RETURNED TO DART AEROSPACE LTD.	

Work Order ID 63656

November 9, 2010 8:00:53 AM



Page 1

Item ID: D6102-001

Accept



Setup Start



Revision ID:

Stop



Item Name: Saddle Billet

Start Date: 11/09/10 Start Qty: 6.00



Cust Item ID:

Required Date: 11/23/10 Req'd Qty: 6.00



Customer:

Reference:

Run Start



Approvals: Process Plan: CL Date: 10/11/09 Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D6102	Rev D								
100	PURCHASING	0.00							
	Purchasing	Memo							
Purchasing	Issue P/O: <u>12888</u> <input type="checkbox"/> a) Description: Aluminum billet <input type="checkbox"/> b) 7.880" x 6.250" x 2.000" thick <input type="checkbox"/> c) Tolerance on all dimensions are +0.006"/-0.000" <input type="checkbox"/> d) Grain direction along 7.880" length <input type="checkbox"/> e) Material: 6061-T6/T651 (QQ-A-250/11) or (QQ-A-200/8) <input type="checkbox"/> Material certi	0.00							
110	Receive & Inspect for Damage & Mat'l Certs	0.00							
	Packaging	Memo							
Packaging	Ensure material certification is attached	0.00							
120	QC6- Inspect dimensions to drawing	0.00							
	QC	Memo							
Quality Control	Check certification to Dwg D6102 for compliance	0.00							

CL 10/11/09 (6)

CL 10/11/09 (6)

CL 10/11/24

CL

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 63656

November 9, 2010 8:00:53 AM

Page 2

Item ID: D6102-001

Accept

Setup Start

Revision ID:

Stop

Item Name: Saddle Billet

Start Date: 11/09/10 Start Qty: 6.00

Cust Item ID:

Required Date: 11/23/10 Req'd Qty: 6.00

Customer:



Reference:


Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130 	Identify as per dwg & Stock Location: <u>MAT</u>	0.00							
Packaging	Memo	0.00				<u>6</u>	<u>0</u>		
Packaging									
140 	QC21- Final Inspection - Work Order Release	0.00							
QC	Memo	0.00							
Quality Control									

10/11/24 ME
10-11-24

Picklist Print

November 9, 2010 8:00:52 AM

Page 1

Work Order ID: 63656



Parent Item: D6102-001



Parent Item Name: Saddle Billet



Start Date: 11/09/10

Required Date: 11/23/10

Start Qty: 6.00

Required Qty: 6.00

Comments: IPP A001.05.04 New Issue ☐ ECC ☐

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6102-001P 		Purchased	No			110	Each	0.0000	1	6			
6061-T6 6.25x7.88x2 													

Handwritten signature and date: 11/19/10

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

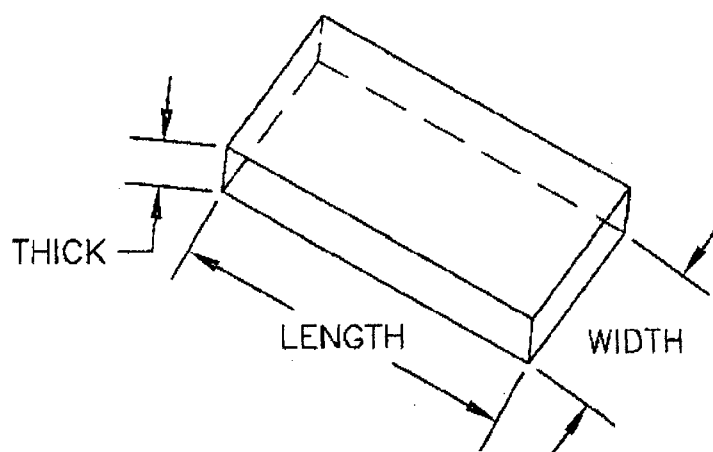
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



DESIGN	<i>#</i>	DRAWN BY	<i>PH</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED	<i>CP</i>	APPROVED	<i>#</i>	DRAWING NO. D6102	Rev. D SHEET 1 OF 1
DATE	06.06.30			TITLE SADDLE BILLET, 6061	SCALE NTS
A	01.03.30			NEW ISSUE	
B	03.10.20			ADD D6102-005/-007/-009	
C	04.08.25			ADD D6102-010/-011	
D	06.06.30			ADD D6102-013	

SPECIFICATION CONTROL DRAWING



RELEASED

06.08.15 #

PURCHASE MATERIAL ACCORDING TO THE FOLLOWING TABLE. SPECIFY ALLOY, LENGTH x WIDTH x THICK (+0.06/-0.00), AND GRAIN DIRECTION AS SHOWN.

TOLERANCE ON ALL DIMENSIONS IS +0.06/-0.00.

ALL DIMENSIONS ARE IN INCHES.

0210/11/09
W/O: 63654

Part No.	Alloy	Length	Width	Thick	Grain Direction
D6102-001	6061-T6/T651 (QQ-A-250/11 or QQ-A-200/8)	7.880	6.250	2.000	Along 7.880 Length
D6102-003	6061-T6/T651 (QQ-A-250/11 or QQ-A-200/8)	6.000	6.250	2.000	Along 6.000 Length
D6102-005	6061-T6/T651 (QQ-A-250/11 or QQ-A-200/8)	47.85	15.250	1.000	Along 47.85 Length
D6102-007	6061-T6/T651 (QQ-A-250/11 or QQ-A-200/8)	7.500	7.000	2.500	Along 7.500 Length
D6102-009	6061-T6/T651 (QQ-A-250/11 or QQ-A-200/8)	11.000	6.000	5.000	Along 11.000 Length
D6102-010	6061-T6/T651 (QQ-A-250/11 or QQ-A-200/8)	7.950	8.250	2.500	Along 7.950 Length
D6102-011	6061-T6/T651 (QQ-A-250/11 or QQ-A-200/8)	6.500	8.250	2.500	Along 6.500 Length
D6102-013	6061-T6/T651 (QQ-A-250/11 or QQ-A-200/8)	6.500	7.000	2.000	Along 6.500 Length

0210/11/24

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SHIP TO: A M CASTLE & CO 3400 NO. WOLF ROAD FRANKLIN PARK, IL 60131
SOLD TO: AM CASTLE & CO- SOLD TO 3400 NO. WOLF ROAD FRANKLIN PARK, IL 60131

KAISER ALUMINUM

Trentwood Works - Spokane, WA 99215

Phone: (800) 367-2586

CERTIFIED TEST REPORT

2/3

Serial Number

LCS

4198975

Ham # 8041

CUSTOMER PO NUMBER: 56328	WORK PACKAGE:	CUSTOMER PART NUMBER: 8641 AMC A96061-161	SHIP RUN/LOAD: 101835/17	GOVT CONTRACT NUMBER:		
KAISER ORDER NO: 1099347	LINE ITEM: 1	SHIP DATE: 9-JUL-2010	ALLOY: 6061	CLAD: BARE	TEMPER: T651	PRODUCT DESCRIPTION: KaiserSelect® Precision Plate
WEIGHT SHIPPED: 11150 LB	QUANTITY: 8 PCS EST.	B/L NUMBER: 2028075	GAUGE: 2.0000 IN	DIAMETER/WIDTH: 48.500 IN	LENGTH: 144.500 IN	

Certified Specifications

AMS 4027/RevN
CMMP 025/RevS

ASME SB 209/Rev2004

ASTM B 209/Rev07

Test Code: 1511

Test Results

Lot: 508904A0 Cast 785

Drop 09

Ingot 2

(ASTM E8/B557)
(EN 2002-1)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T651	LT / 2 (Min:Max)	48.3 : 48.6 (333 : 335)	43.1 : 43.7 (297 : 301)	14.2 : 14.5

Controlled by CASTLE METALS - Mil.
to P & WC - MCL Manual Section FC-17

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual	0.68	0.5	0.28	0.07	1.1	0.19	0.11	0.02	0.01	0.00	TOT 0.04

Lot: 508968A4 Cast 785

Drop 08

Ingot 2

(ASTM E8/B557)

(EN 2002-1)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T651	LT / 2 (Min:Max)	49.5 : 49.5 (341 : 341)	44.3 : 44.7 (305 : 308)	14.6 : 14.7

(ASTM E1261)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual	0.70	0.6	0.30	0.09	1.0	0.20	0.14	0.02	0.01	0.00	TOT 0.04

Handwritten signature and date 10/11/24



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID PO12888

Purchase Order Date 11/09/10

PO Print Date 11/09/10

Page Number 1 of 1

Order From :

VC-MET001

METAUX CASTLE
A.M. CASTLE & CO. (CANADA) INC. - BOX B9204 PO BOX 9100
TORONTO, ON M4Y 3A5
CA

Contact Name

Vendor Phone 514 694 9575

Vendor Fax 514 695 3281

Vendor Account Nbr

Buyer

Requisition Nbr

Tax Resale Nbr 10127-2607

Terms Net 30

Currency CAD

FOB Destination-Collect

Ship To :

DART AEROSPACE LTD

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

FXED
11/12/10

Line Nbr	Reference Revision ID Vendor Part Number	Description/ Mfg ID	Req Date/ Taxable	Req Qty/ Unit of Measure	Ship Method	Unit Price	Extended Price
1	D6102-001P	6061-T6 6.25x7 88x2	11/23/10 Yes	6.00 Each	Yours ppd	\$39.7500	\$238.50

Special Inst: ALLUMINUM BILLET MATERIAL:
6061-T6/T651 AS PER QQ-A-250/11 OR
QQ-A-200/8
SIZE: 7.880" X 6.250" X 2.000" THICK
GRAIN DIRECTION ALONG 7.880"
LENGTH
TOLERANCE ON ALL DIMENSION ARE
+0.006"/-0.000"
B63656

PO Total:

\$238.50

**MATERIAL CERTIFICATION
REQ'D UPON DELIVERY**

CL

No substitution or deviation without
consent.
Certificate of Conformity or Material
Certification required when applicable

Change Nbr: 1

Change Date: 11/09/10

KAISER ALUMINUM

Trentwood Works - Spokane, WA 99215
Phone: (800) 367-2586

CERTIFIED TEST REPORT

Serial Number
4198975

3/3 105
Item# 8041

ALLOY LIMITS

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER	MAX
6061 MIN	0.40	0.0	0.15	0.00	0.8	0.04	0.00	0.00	0.00	0.00	EACH	0.05
MAX	0.8	0.7	0.40	0.15	1.2	0.25	0.25	0.15	0.05	0.05	TOT	0.15

Aluminum Remainder.

TEST NOTES

8061 sheet or plate certified to AMS 4025, AMS 4026, or AMS
4027 also meets applicable requirements of AMS-QQ-A-260/11
Rev.A.

Castle Metals FP

HEAT NUMBER 50895944
MECHANICAL ID _____
ITEM CODE 81641
LOT NUMBER _____
PO NUMBER 56328
RECEIPT DATE 7-15-2010
SUPPLIER KAISER
SPECIFICATION _____
LOS AL
COMMENT _____
APPROVED DL

DL
10/11/24

CERTIFICATION

KAISER ALUMINUM FABRICATED PRODUCTS, LLC (KAISER) HEREBY CERTIFIES THAT METAL SHIPPED UNDER THIS ORDER WAS MELTED IN THE UNITED STATES OF AMERICA OR A QUALIFYING COUNTRY PER OFARS 226.072-1(a), WAS MANUFACTURED IN THE UNITED STATES OF AMERICA, AND MEETS THE REQUIREMENTS OF OFARS 262.226 FOR DOMESTIC CONTENT. THIS MATERIAL HAS BEEN INSPECTED, TESTED, AND FOUND IN CONFORMANCE WITH THE REQUIREMENTS OF THE APPLICABLE SPECIFICATIONS AS INDICATED HEREIN. ALL METAL WHICH IS SOLUTION HEAT TREATED COMPLIES WITH AMS 2772. ANY WARRANTY IS LIMITED TO THAT SHOWN ON KAISER'S STANDARD GENERAL TERMS AND CONDITIONS OF SALE. TEST REPORTS SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF KAISER ALUMINUM FABRICATED PRODUCTS, LLC LABORATORY. THE RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR ENTRIES ON THE CERTIFICATE MAY BE PUNISHED AS A FELONY UNDER FEDERAL LAW, ISO-9001:2000 CERTIFIED.

BILL POYNOR, LABORATORIES SUPERVISOR

Bill Poy